

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously Presented) An exhaust gas purifying apparatus in an internal combustion engine provided with an intake path, and a plurality of parallel exhaust paths including at least first and second exhaust paths, the apparatus comprising:

- catalysts respectively arranged in the plurality of exhaust paths for purifying unclean substances contained in exhaust gas;
- a first exhaust gas recirculating path for supplying the exhaust gas from the first exhaust path to the intake path;
- a second exhaust gas recirculating path for supplying the exhaust gas from the second exhaust path to the intake path;
- an exhaust flow rate adjusting section adjusting a flow rate of the exhaust gas discharged from the first exhaust path to a downstream side;
- a supply flow rate adjusting section adjusting a flow rate of the exhaust gas supplied to the intake path from the first exhaust path via the first exhaust gas recirculating path; and
- a control section controlling an opening degree of the exhaust flow rate adjusting section and an opening degree of the supply flow rate adjusting section on the basis of information relating to the temperature of at least one of the catalysts, wherein the control section decreases the opening degree of the exhaust flow rate adjusting section and increases the opening degree of the supply flow rate adjusting section in such a manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the other exhaust paths than the first exhaust path becomes smaller in a case that the temperature of the catalyst arranged in the other exhaust paths exists in a preset low temperature region than in other cases.

2. (Previously Presented) An exhaust gas purifying apparatus in an internal combustion engine provided with an intake path, and parallel first and second exhaust paths, the apparatus comprising:

- catalysts respectively arranged in the first and second exhaust paths for purifying exhaust gas;

a first exhaust gas recirculating path for supplying the exhaust gas from the first exhaust path to the intake path;

a second exhaust gas recirculating path for supplying the exhaust gas from the second exhaust path to the intake path;

an exhaust flow rate adjusting section adjusting a flow rate of the exhaust gas discharged from the first exhaust path to a downstream side;

a supply flow rate adjusting section adjusting a flow rate of the exhaust gas supplied to the intake path from the first exhaust path via the first exhaust gas recirculating path; and

a control section controlling an opening degree of the exhaust flow rate adjusting section and an opening degree of the supply flow rate adjusting section on the basis of an information relating to the temperature of at least one of the catalysts, wherein the control section decreases the opening degree of the exhaust flow rate adjusting section and increases the opening degree of the supply flow rate adjusting section in such a manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the second exhaust path becomes smaller in a case that the temperature of the catalyst arranged in the second exhaust path exists in a preset low temperature region than in other cases.

3. (Previously Presented) The exhaust gas purifying apparatus according to claim 1, further comprising a variable nozzle type turbocharger supplying air by utilizing an exhaust gas flow, the turbocharger including a turbine portion provided at the first exhaust path,

wherein the exhaust flow rate adjusting section is provided with the turbine portion,

wherein the supply flow rate adjusting section is provided with a flow rate adjusting valve adjusting a flow rate in the first exhaust gas recirculating path,

wherein the first exhaust gas recirculating path is connected to a portion of the first exhaust path in an upstream side of the turbine portion, and

wherein the control section controls an opening degree of a vane provided in the turbine portion, and an opening degree of the flow rate adjusting valve.

4. (Previously Presented) The exhaust gas purifying apparatus according to claim 1, further comprising an exhaust throttle valve provided in a portion of the first exhaust path in a downstream side of a joint portion between the first exhaust gas recirculating path and the first exhaust path,

wherein the exhaust flow rate adjusting section is provided with the exhaust throttle valve,

wherein the supply flow rate adjusting section is provided with a flow rate adjusting valve adjusting a flow rate in the first exhaust gas recirculating path, and

wherein the control section controls an opening degree of the exhaust throttle valve, and an opening degree of the flow rate adjusting valve.

5. (Previously Presented) The exhaust gas purifying apparatus according to claim 2, wherein the exhaust flow rate adjusting section is provided with a first exhaust valve provided in a portion of the first exhaust path in a downstream side of a joint portion between the first exhaust gas recirculating path and the first exhaust path, and a second exhaust valve provided in a portion of the second exhaust path in a downstream side of a joint portion between the second exhaust gas recirculating path and the second exhaust path, and

wherein, in the case that the temperature of the catalyst arranged in the second exhaust path exists in the low temperature region, the control section minimizes an opening degree of the first exhaust valve and maximizes an opening degree of the second exhaust valve.

6. (Previously Presented) The exhaust gas purifying apparatus according to claim 2, wherein the supply flow rate adjusting section is provided with a first recirculating valve provided in the first exhaust gas recirculating path, and a second recirculating valve provided in the second exhaust gas recirculating path, and

wherein, in the case that the temperature of the catalyst arranged in the second exhaust path exists in the low temperature region, the control section maximizes an opening degree of the first recirculating valve and minimizes an opening degree of the second recirculating valve.

7. (Previously Presented) The exhaust gas purifying apparatus according to claim 1, wherein the control section controls the exhaust flow rate adjusting section in such a manner that the exhaust gas is not discharged from the first exhaust path in the case that the temperature of the catalyst arranged in the other exhaust path exists in the low temperature region.

8. (Previously Presented) The exhaust gas purifying apparatus according to claim 1, wherein that the information relating to the temperature of the catalyst includes an exhaust gas temperature detected by a temperature detector.

9. (Currently Amended) An exhaust gas purifying method in an internal combustion engine provided with an intake path and parallel first and second exhaust paths, the method comprising:

purifying exhaust gas discharged from the first and second exhaust paths by catalysts respectively provided in the first and second exhaust paths;
recirculating the exhaust gas to the intake path from the first exhaust path;
recirculating the exhaust gas to the intake path from the second exhaust path;
providing exhaust gas discharged from the first exhaust path to a downstream side;
providing exhaust gas supplied to the intake path from the first exhaust path;
acquiring information relating to a temperature of at least one of the catalysts;
and
decreasing a flow rate of [an] the exhaust gas discharged to [a] the downstream side from the first exhaust path and increasing a flow rate of [an] the exhaust gas recirculated to the intake path from the first exhaust path based on said temperature

information in such a manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the second exhaust path becomes smaller in the case that the temperature of the catalyst arranged in the second exhaust path exists in a preset low temperature region than in other cases.

10. (Previously Presented) The exhaust gas purifying method according to claim 9, wherein a first exhaust valve is provided in the first exhaust path, a second exhaust valve is provided in the second exhaust path, a first recirculating valve is provided in a first exhaust gas recirculating path recirculating the exhaust gas to the intake path from the first exhaust path, and a second recirculating valve is provided in a second exhaust gas recirculating path recirculating the exhaust gas to the intake path from the second exhaust path, and

wherein the method further comprises minimizing the opening degrees of the first exhaust valve and the second recirculating valve and maximizing the opening degrees of the second exhaust valve and the first recirculating valve.

11. (Previously Presented) The exhaust gas purifying apparatus according to claim 2, further comprising a variable nozzle type turbocharger supplying air by utilizing an exhaust gas flow, the turbocharger including a turbine portion provided at the first exhaust path,

wherein the exhaust flow rate adjusting section is provided with the turbine portion,

wherein the supply flow rate adjusting section is provided with a flow rate adjusting valve adjusting a flow rate the first exhaust gas recirculating path,

wherein the first exhaust gas recirculating path is connected to a portion of the first exhaust path in an upstream side of the turbine portion, and

wherein the control section controls an opening degree of a vane provided in the turbine portion, and an opening degree of the flow rate adjusting valve.

12. (Previously Presented) The exhaust gas purifying apparatus according to claim 2, further comprising an exhaust throttle valve provided in a portion of the first exhaust path

in a downstream side of a joint portion between the first exhaust gas recirculating path and the first exhaust path,

wherein the exhaust flow rate adjusting section is provided with the exhaust throttle valve,

wherein the supply flow rate adjusting section is provided with a flow rate adjusting valve adjusting a flow rate the first exhaust gas recirculating path, and

wherein the control section controls an opening degree of the exhaust throttle valve, and an opening degree of the flow rate adjusting valve.